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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/633,813	Applicant(s) NISHIUCHI ET AL.	
	Examiner Kim-Kwok CHU	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Pre-Amendment filed on August 4, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-9, 14 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-9, 14, 20 and 21 is/are rejected.
- 7) ☒ Claim(s) 19, 22 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/4/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/702,204.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Specification

1. The abstract of the disclosure is objected to because the abstract is written in a claim format. Correction is required. See MPEP § 608.01(b).

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claim 20 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,661,749. Although the conflicting claims are not identical, they are not patentably distinct from each other.

4. With respect to the present claim 20, the '749 patent's claim 1 is not identical to the present claim 20 but has every limitations of the present claim 20. Especially, the following limitation "the amount and direction of shift of the center of the address section are determined so as to offset to substantially zero the amount and direction of shift of a center of an address section that appear in a signal reproduced from a calibration substrate" as cited in the present claim 20, last 3 lines are contained in '749 patent's claim 1, last 9 lines.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless -
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.*

6. Claims 1-3 and 21 are rejected under 35 U.S.C. § 102(e) as being anticipated by Takemura et al. (U.S. Patent 6,172,960).

Takemura teaches a substrate for an optical recording medium having all of the elements and means as recited in claims 1-3. For example, Takemura teaches the following:

(a) as in claim 1, a plurality of recording tracks (21, 23) formed on a disc (Fig. 3A; recording track includes a plurality of grooves);

(b) as in claim 1, an address section 5 comprising first and second address pit sequences 16-19 formed between the recording tracks along an information reading direction of the recording tracks (Fig. 3A; each track section is divided by address pit sequences);

(c) as in claim 1, the recording tracks 21, 23 are divided into a prescribed number of zones (Fig. 1; each zone contains a plurality of grooves);

(d) as in claim 1, each of the recording track 21, 23 having a first center line 21 extending along the information reading direction (Fig. 3A; groove 21 has a center line);

(e) as in claim 1, the first and second address pit sequences (16, 17 and 18, 19) each having a respective center axis extending along the information reading direction (Fig. 3A; first address pit is 16, 17; second address pit is 18, 19; each address pit has a center line $T_p/2$ offset from a track's center line);

(f) as in claim 1, the address pit's center axis disposed equidistantly from and on opposing sides of a second center line 22 of the address section 5, the second center line 22 extending along the information reading direction (Fig. 3A; address pit 16, 17 and 18, 19 opposing to each other and disposed equidistantly from land 22's center line);

(g) as in claim 1, the second center line 22 is shifted in radial direction of the disc, with respect to the first center line 21 to form a predetermined offset (Fig. 3A; second center line 22 is shifted T_p from first center line 21);

(h) as in claim 2, the address section 5 comprises a pair of intermediate addresses 16, 17 and 18, 19 located at positions

shifted relative to each other in the radial direction of the disc (Fig. 3A);

(i) as in claim 2, the center of the address section is represented by a center line extending between center axes of the intermediate addresses (Fig. 3A); and

(j) as in claim 3, the direction of shift of the center of the address section is reversed between the shift relative to the radially outermost recording track and the shift relative to the radially innermost recording track in the same zone (Fig. 4A; address section 16, 17 shift towards the center line, address section 18, 19 shift away from the center line).

7. Method claim 21 is drawn to the method of using the corresponding apparatus claimed in claim 1. Therefore method claim 21 corresponds to apparatus claim 1 and is rejected for the same reason of anticipation as used above.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takemura et al. (U.S. Patent 6,172,960) in view of Ton-That (U.S. Patent 5,796,543).

Takemura teaches an optical disk very similar to that of the instant invention. However, Takemura does not teach the following:

(a) as in claim 4, the amount of shift of the center of the address section decreases continuously or in a step-like manner within each zone from the radially outermost or innermost portion of each zone toward the center thereof.

Ton-That teaches a servo sector where each servo address group is offset by a fractional increment (Fig. 5A and 5B).

To continue reproduce address information without a track jump to the left and right along the center of a track, it would have been obvious to one of ordinary skill in the art at the time

of invention to arrange Takemura's address pits similar to Ton-That's servo sector, because the incremental shift of each address information relative to the center line of a track such as Ton-That's allows Takemura's optical head continuously read the address pit sequence without the need of changing a track.

10. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takemura et al. (U.S. Patent 6,172,960) in view of Miyagawa et al. (U.S. Patent 6,118,752).

Takemura teaches an optical disk very similar to that of the instant invention. However, Takemura does not teach the following:

(a) as in claim 6, the optical recording medium comprising a phase change type thin film recording layer formed on an upper surface of the substrate for an optical recording medium; and

(b) as in claim 7, the phase change type thin film recording layer is initialized in advance.

Miyagawa teaches an optical disk having the following features:

(a) the optical recording medium comprising a phase change type thin film recording layer formed on an upper surface of the substrate for an optical recording medium (Fig. 9; column 36, lines 9-11); and

(b) the phase change type thin film recording layer is initialized (crystallized) in advance (Fig. 9; a new phase-change type optical medium has to be initialized first before it can be used to record data).

For the benefit of a recording medium to be rewritable, it would have been obvious to one of ordinary skill in the art at the time of invention to use a phase-change type recording medium such as Miyagawa's in Takemura's optical recording/reproducing system, because the phase-change type recording medium can be rewritten for editing the content of the recorded information.

11. Claims 8, 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takemura et al. (U.S. Patent 6,172,960) in view of Tanoue et al. (U.S. Patent 6,064,643) and Inui et al. (U.S. Patent 5,933,411).

Takemura teaches an optical disc very similar to that of the instant invention. For example, Takemura teaches the following:

(a) as in claim 9, in an area for the recording tracks, parallel or wobbled guide grooves are formed (Fig. 3A); and

(b) as in claims 9 and 14, in an area for the address section 5, a beam of light is shifted in the radial direction of the disc so that, in each zone, the center of the address section corresponding at least to the recording track in the radially outermost or radially innermost guide groove shifts in the radial direction of the disc in relative relationship to the center of the recording track in the guide groove (Fig. 3A; address pits 5 are formed by shifting a beam of light so that the address pits are offset relative to the center of the recording track).

However, Takemura does not teach the following:

(a) as in claim 8, a master disc recording apparatus to produce the substrate for an optical recording medium;

(b) as in claim 8, portions corresponding to the guide grooves and the address section are formed on a glass master disc having a photoresist layer;

(c) as in claim 9, the apparatus comprising a light source for photographically exposing the photoresist layer on the glass master disc;

(d) as in claim 9, an optical modulator for optically modulating light of the light source in accordance with an address signal;

(e) as in claim 9, a deflector for deflecting the optically modulated light;

(f) as in claim 9, the deflector is an EO deflector which deflects the optically modulated light;

(g) as in claim 14, a signal generating apparatus supplies the optical modulator with a binary signal corresponding to the address signal, and supplies the EO deflector with (a) in the case of the recording track area, a voltage for forming parallel or wobbling guide grooves, and (b) in the case of the address section area, a shift voltage for deflecting the optically modulated light;

Tanoue teaches an optical recording disk having the following features:

(a) a master disc recording apparatus to produce the substrate for an optical recording medium 40 (Fig. 5);

(b) portions corresponding to the guide grooves and the address section are formed on a glass master disc having a photoresist layer (Fig. 5; column 11, lines 65-67);

(c) a light source 41 for photographically exposing the photoresist layer on the glass master disc (Fig. 5);

(d) an optical modulator 44 for optically modulating light of the light source 41 in accordance with an address signal (Fig. 5; column 11, lines 50-53);

(e) a deflector 47 for deflecting the optically modulated light (Fig. 5); and

(f) a signal generating apparatus 49 supplies the optical modulator 44 with a binary signal corresponding to the address signal.

Inui teaches an optical recording disk having the following features:

(a) a deflector 223 is an EO deflector which deflects the optically modulated light (Fig. 19; column 12, lines 58-63);

(b) a signal generating apparatus 226 that supplies the EO deflector 223 with (a) in the case of the recording track area, a voltage for forming parallel or wobbling guide grooves, and (b) in the case of the address section area, a shift voltage for deflecting the optically modulated light (Fig. 19; column 13, lines 27-40);

(c) the polarity of the shift voltage supplied to the EO deflector 223 is reversed between the voltage for the radially outermost recording track and the voltage for the radially innermost recording track in the same zone (Fig. 19; voltage

polarity changes in order to change the deflector's deflecting angle).

Referring to the features of producing a master disc in claims 8 and 9, to produce track structures such as guide grooves and address sections on the disc, it would have been obvious to one of ordinary skill in the art to produce Takemura's optical disc with a photoresist layer similar to Tanoue's, because optical disc structures such as guide groove and address section are etched from a substrate layer using the photoresist layer.

Second, referring to the mastering of a blank new master disc, it would have been obvious to one of ordinary skill in the art to use a disc mastering apparatus such as Tanoue's, because the disc mastering apparatus writes data and addresses on the disc in the form of pits so that copies of the disc can be stamped from the master disc.

Furthermore, in order to form data pits on the master disc of Takemura's, it would have been obvious to one of ordinary skill in the art to use Tanoue's disc mastering apparatus with a laser light source, an optical modulator, a deflector and a signal generator means, because the light source is modulated with information such as an address supplied by the signal generator. Then, the modulated light outputted from the modulator is deflected by the deflector to the proper locations

on the disc to form pits. In general, it is known as formatting a new blank disc.

On the other hand, referring to claims 9 and 14 about the EO deflector and its deflecting voltages, they are considered as typical light deflecting operations. For example, it would have been obvious to one of ordinary skill in the art to use an electro-optical light deflecting means such as Inui's in Tanoue's disc mastering apparatus, because the light deflecting means is driven by electro magnetic means such that the light deflecting angle of the deflector is controlled by the electro-magnetic means.

In addition, since the light deflecting means is controlled by the EO deflector such as Inui's, it would have been obvious to one of ordinary skill in the art to drive the electro-optical deflector with a voltage to form parallel tracks and a shift voltage to form wobble address sections on Tanoue's master disc, because the parallel tracks are formed by a deflecting voltage while the wobble address sections which are offset from the regular tracks are formed by a shift voltage instead of the voltage for track deflection.

Since the address section such as Tanoue's is positioned on either side of a track, it would have been obvious to one of ordinary skill in the art to have reversible shift voltages for forming wobble address sections, because the reverse voltage

would have controlled the light deflector in an opposite direction when an address section is formed on the other side of the track.

Allowable Subject Matter

12. Claims 19, 22 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

As in claim 19, the prior art of record fails to teach or fairly suggest an optical recording medium where the predetermined offset is a radial shift substantially equal in amount and opposite in direction to a radial shift between third and fourth center lines measured on a calibration substrate, the third center line defined by a center of an address section on the calibration substrate, and the fourth center line defined by a center line of a recording track on the calibration substrate.

As in claims 22 and 23, the prior art of record fails to teach or fairly suggest a method for producing a substrate for an optical recording medium having a step of determining the amount and direction of the offset using a calibration substrate.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

14. Any response to this action should be mailed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Or faxed to:

(571) 273-8300 (for formal communications intended for entry. Or:

(571) 273-7585, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Any inquiry of a general nature or relating to the status of this application should be directed USPTO Contact Center (703) 308-4357; Electronic Business Center (703) 305-3028.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

Kim-Kwok CHU
Examiner AU2627

cc 4/26/06

April 26, 2006
(571) 272-7585


THANG V. TRAN
PRIMARY EXAMINER